IN THE CLAIMS:

1. (currently amended) A method for reducing oral mucositis in a human or animal cancer patient undergoing radiation therapy, the method comprising administering to said cancer patient undergoing radiation therapy in need of reduction of oral mucositis an effective amount of a protective agent selected from the group consisting of D-methionine, L-methionine, a mixture of D-methionine and L-methionine, and a pharmaceutically acceptable salt thereof.

Claims 2 - 3. (canceled)

4. (previously presented) A method as set forth in claim 1, wherein the protective agent is D-methionine.

5. (previously presented) A method as set forth in claim 1, wherein the protective agent is L-methionine.

6. (previously presented) A method as set forth in claim 1, wherein the protective agent is D,L-methionine.

7. (previously presented) A method as set forth in claim 1, wherein the protective agent is administered prior to said radiation therapy.

8. (previously presented) A method as set forth in claim 1, wherein the protective agent is administered simultaneously with said radiation therapy.

9. (previously presented) A method as set forth in claim 1, wherein the protective agent is administered subsequently to said radiation therapy.

10. (previously presented) A method as set forth in claim 1, wherein the effective amount of the protective agent is administered to said patient in a time period of from 6 hours before to 6 hours after the radiation therapy.

11. (previously presented) A method as set forth in claim 1, wherein the effective amount of the protective agent is administered to said patient in a time period of from 1 hour before to 1 hour after the radiation therapy.

12. (previously presented) A method as set forth in claim 1, wherein the effective amount of the protective agent is administered to said patient in a time period of from one-half hour before to one-half hour after the radiation therapy.

13. (previously presented) A method as set forth in claim 1, wherein effective amount of the protective agent is administered to said patient orally, parenterally or topically, and the administration of said effective amount of protective agent results in a blood serum level equivalent to that achieved by parenteral administration in the range of from 1.0 mg/kg body weight to 600 mg/kg body weight.

14. (previously presented) A method as set forth in claim 13, wherein the administration of said effective amount of the protective agent results in a blood serum level equivalent to that achieved by parenteral administration in the range of from 5 mg/kg body weight to 500 mg/kg body weight.

15. (previously presented) A method as set forth in claim 13, wherein the administration of said effective amount of the protective agent results in a blood serum level equivalent to that achieved by parenteral administration in the range of from 10 mg/kg body weight to 400 mg/kg body weight.

16. (original) A method as set forth in claim 1, further comprising administering to said patient a supplemental amount of the protective agent after the administration of said effective amount.

17. (original) A method as set forth in claim 16, wherein said supplemental amount of the protective agent is administered orally, parenterally, or topically to said patient.

Claims 18 - 37. (canceled)

38. (previously presented) The method as set forth in claim 1 wherein the patient is further undergoing treatment with a chemotherapeutic effective amount of an anti-tumor platinum-coordination compound.

39. (previously presented) The method as set forth in claim 38 wherein the anti-tumor platinum-coordination compound is cisplatin.

40. (previously presented) The method as set forth in claim 39 wherein the protective agent is D-methionine.